

- c3
- (a) depositing a selected volume between about 0.002 nl and about 2 nl of a solution comprising a selected, isolated polynucleotide at a discrete region on the surface of the substrate, and
  - (b) repeating step (a) at other locations on the surface of the substrate until a microarray of 400 or more regions is formed, wherein the regions are at a density of at least about 400 regions/cm<sup>2</sup>.
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c4

34. (Amended) A substrate with a surface comprising a microarray of DNA sequences and suitable for analysis of a polynucleotide mixture, wherein (i) the microarray has a density of about 400 or more discrete regions of DNA sequences per cm<sup>2</sup> of substrate surface; (ii) each of said regions contains, as an isolated polynucleotide, a unique DNA sequence having at least about 50 subunits; (iii) the microarray comprises at least 400 regions essentially free of cross-contamination by individually applied DNA sequences unique to others of said 400 regions, such that the DNA sequences in said regions are selective in hybridizing with corresponding members of said mixture.

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c5

40. (New) The substrate of claim 21, wherein the regions are at a density between about 62,500 regions/cm<sup>2</sup> and about 625 regions/cm<sup>2</sup>.

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## II. REMARKS

(a) **Status of Claims:**

Claims 7-39 have previously been examined and are rejected on various grounds. By virtue of this Amendment, claims 7, 21 and 34 are amended to more clearly point out and distinctly claim the subject matter which the Applicants regard as the invention. New claim 40 has been added.